

ABSTRACT

A heterobipolar transistor (HBT) for high-speed BiCMOS applications is provided in which the collector resistance, R_c , is lowered by providing a buried refractory metal silicide layer underneath the shallow trench isolation region on the subcollector of the device. Specifically, the HBT of the present invention includes a substrate including at least a subcollector; a buried refractory metal silicide layer located on the subcollector; and a shallow trench isolation region located on a surface of the buried refractory metal silicide layer. The present invention also provides a method of fabricating such a HBT. The method includes forming a buried refractory metal silicide underneath the shallow trench isolation region on the subcollector of the device.